Comparative Real Gross Domestic Product Per Capita and Per Employed Person Fourteen Countries 1960-1998

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Level comparisons of gross domestic product (GDP)

The accompanying tables present comparative levels and trends in real gross domestic product per capita and per employed person for fourteen countries. This report represents an update of earlier comparative GDP per capita and per employed person series produced by the BLS.

Gross domestic product (GDP) is the most comprehensive measure generally produced of a country's economic output, being the value of all market and some non-market goods and services produced within its territory. GDP per capita may therefore be viewed as a rough indicator of a nation's prosperity, while GDP per employed person can provide a general picture of a country's overall productivity. These are only approximate measures, since a country's welfare consists of many things that are not included in its GDP.

Also, using the number of persons employed as a measure of labor input ignores differences in the number of hours worked and in the skill levels of employees. Nevertheless, GDP as well as GDP per capita or per employed person are used to compare the economic performance of different countries.

Because in each country's national statistics GDP is valued in terms of its national currency units, these results have to be converted to some common unit of value before they can be compared directly. In this report all GDP series are converted to U.S. dollars through the use of purchasing power parities. They are then expressed in constant 1998 U.S. dollars.

Purchasing power parities (PPPs)

PPPs are currency conversion rates that allow output in different currency units to be expressed in a common unit of value.

A PPP for a given country is a ratio, in which the numerator is the number of national currency units needed to purchase a basket of goods and services in that country and the denominator is the number of currency units needed to purchase a similar basket of goods and services in the base country. The base country for this report is the United States.

Thus PPPs are interspatial indexes constructed for the purpose of comparing currencies and volumes across countries. They are somewhat analogous to an intertemporal price index, such as a consumer price index used within a country to compare changes in prices over time. Just as a consumer price index measures the cost of a basket of goods and services over time, PPPs can be used to measure the cost of a particular basket of goods and services across countries.

The procedures are similar: calculate the ratio of prices (or amounts of each country's currency) for each of a detailed set of goods and services, and then construct a weighted average of the price (or units of currency) ratios to arrive at an overall index. For references and a lengthier discussion of PPP procedures, see the Appendix.

Purchasing Power Parities have been or are being currently used by a number of international organizations to compare performance levels among countries and regions. These include the Organisation for Economic Co-operation and Development (OECD), the Statistical Office of the European Union (EUROSTAT), the United Nations, the International Monetary Fund, and the World Bank.

Purchasing power parities and currency exchange rates

Inter-country comparisons of output levels are sometimes based on market exchange rates rather than PPPs. However, market exchange rates seldom reflect the relative purchasing powers of different currencies. At best, market exchange rates represent only the relative prices of goods and services that are traded internationally, not the relative value of total domestic output, which also consists of goods, and particularly services, that are not traded internationally, or which are isolated from the effects of foreign trade. Market exchange rates are also affected by influences entirely unrelated to the relative values of any goods or services. These influences include currency traders' views of the stability of governments in various countries, relative interest rates among countries, and other incentives for holding financial assets in one currency rather than another.

Relative prices

Comparative price-level indexes for total GDP, with the U.S. level equal to 100, can be constructed using both PPPs and exchange rates. These comparative price-level indexes indicate whether average prices for total GDP in a given country are high or low relative to the United States. They are derived by dividing the PPPs by the market exchange rates. An index number less than 100 indicates that one hundred U.S. dollars (exchanged at the market exchange rate) can purchase more goods and services of equivalent value in the foreign country than can be purchased in the United States; an index number greater than 100 indicates that one hundred U.S. dollars can purchase fewer goods and services of equivalent value.

Use and interpretation of purchasing power parities

PPPs are an effective tool for international economic comparisons. However they should be used and interpreted with caution, given certain aspects of the collection and estimation procedures used (see the Appendix). While comparative estimates like GDP per capita are useful for grouping countries, a strict ranking order (a "league table") interpretation should be avoided. The per capita GDPs of most OECD countries fall within a relatively narrow range, and changes in rankings can occur as a result of relatively minor adjustments to PPP estimates.

Some features of PPP estimation that may influence the accuracy of the results:

Representativeness of goods and services to be priced

It is difficult to find goods and services for pricing that are representative of the goods and services actually purchased in all countries.

Price comparability

There may be a lack of comparability between national prices. This can arise from differences in the characteristics of the products that countries price, or because of the sampling procedures that countries use to collect prices.

Aggregation method

The results are influenced by the aggregation method used to combine different commodity groups into a single PPP for total GDP in each country. A different aggregation method can produce different PPP estimates. (See the Appendix.)

PPP quality varies by sector

Certain expenditure categories are resistant to comparison, because they cover products or services which are difficult to specify for pricing across countries (e.g., services and information technology products) or because they cover consumption for which no market prices exist (e.g., government services, fixed capital formation, and imputed rents of owner occupiers).

Country capabilities

Participating countries differ in their financial and technical support of the PPP program, and therefore in the extent to which they are able to satisfy all of the program's methodological requirements.

Estimating PPPs for non-benchmark years

For non-benchmark years, PPPs are usually estimated by extrapolation, based on relative movements of GDP implicit price deflators. Such extrapolations may produce imprecise PPP estimates for these years. (See the Appendix.)

GDP per capita and per employed person, Germany—1991-98

GDP

In previous issues of this report, comparisons were made between other economies and West Germany only, because historical statistical data were available only for the former West Germany. Beginning with 1991, the German Federal Statistical Office has begun publishing national accounts data for Germany as a whole. The table below shows GDP per capita and per employed person for the former West Germany and for Unified Germany, for 1991 to 1998, indexed to the corresponding U.S. levels.

GDP per capita and per employed person, 1991-1998 Based on EKS PPPs¹ (U.S. = 100)

GDP per

	per ca	pita	employed person				
	West	Unified	West	Unified			
	Germany	Germany	Germany	Germany			
1991	83.5	72.1	86.9	74.9			
1992	84.7	74.6	87.9	79.1			
1993	80.2	72.1	85.7	78.6			
1994	80.3	73.0	88.3	81.3			
1995	81.2	74.2	90.7	83.6			
1996	78.4	72.3	89.4	82.8			
1997	77.2	70.9	90.3	83.8			
1998	76.7	70.5	90.2	83.8			

¹Before 1992, PPPs pertain to West Germany. Beginning with 1992, PPPs pertain to Unified Germany. The same PPP series is used in the estimates for both former West Germany and Unified Germany.

DATA SOURCES

The estimates shown in this report are based on data available as of November 1999.

Gross Domestic Product. The GDP measures used for all countries come from their national accounts sources. The methods of measuring GDP and the price changes used to deflate current-value GDP differ among the countries covered by this data set. In particular, different countries have used different systems of national accounts, e.g. the United Nations System of National Accounts (SNA 68 and SNA 93) and the European System of Integrated National Accounts (ESA 79 and ESA 95) derived from them. The U.S. GDP series is based on the system of national income and product accounts (NIPA's) estimated by the Bureau of Economic Analysis (BEA).

One major difference among countries pertains to the weighting scheme used to derive real GDP. The SNA 93 and ESA 95 recommend annual-weighted real output measures. The U.S. GDP series is also a chain-type annual-weighted measure of real GDP. Most historical series of real GDP for the other countries in this report were developed using fixed-price-weight schemes in which the base year is updated periodically, for example every 5 or 10 years. An exception to this is Japan, where real GDP measures for the entire 1970-98 period are based on the price weights of a single base year. For many countries it has been necessary to link several time series, each of which has its own set of base-year price weights, to construct one real GDP series for use over a longer time period.

Population. The population figures used for all countries are derived from national statistical sources. The population data for Italy are compatible with the underlying BLS data set of the report *Comparative Civilian Labor Force Statistics*, *Ten Countries*, for October 22, 1999. For further information, including breaks in series, see Notes following Table 6.

Employment. For the United States, Canada, Japan, Korea, Belgium, the Netherlands, and the United Kingdom, the primary data sources for employment levels are household or labor force surveys. Except for Korea and Belgium, the employment figures use underlying data from the BLS data set *Comparative Civilian Labor Force Statistics, Ten Countries*, for October 22, 1999, which have been adjusted for greater comparability with U.S. concepts. For this report, these underlying data have also been adjusted to include the armed forces.

For all other countries except Italy, the employment series used are those published with the countries' national accounts. For Italy, employment is estimated using Bank of Italy and OECD figures. BLS adjusts the Italian employment data to include armed forces. The published employment figures for France and Germany include non-resident workers from border countries and exclude residents working in border countries. For further information, including breaks in series, see Notes following Table 6.

8 Table 1. Real GDP per CAPITA Converted to U.S. Dollars using EKS PPPs (1998 U.S. Dollars)

Year	United								Former	Unified		Nether-			United
roui	States	Canada	Japan	Korea	Austria	Belgium	Denmark	France	W.Germany	Germany	Italy	lands	Norway	Sweden	Kingdom
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1960	13,414	10,503	4,672	1,420	7,666	8,069	9,793	8,546	9,842	NA	7,286	9,351	8,120	9,894	9,974
1961	13,503	10,617	5,179	1,460	8,030	8,442	10,299	8,923	10,162	NA	7,854	9,495	8,546	10,401	10,146
1962	14,099	11,134	5,571	1,449	8,172	8,847	10,785	9,350	10,512	NA	8,272	9,766	8,706	10,784	10,187
1963	14,498	11,486	6,001	1,538	8,451	9,163	10,749	9,673	10,704	NA	8,671	9,951	8,968	11,295	10,525
1964	15,128	12,009	6,602	1,643	8,901	9,709	11,620	10,199	11,302	NA	8,825	10,663	9,346	11,975	11,022
1965	15,893	12,556	6,900	1,694	9,097	9,963	12,083	10,596	11,776	NA	9,041	11,075	9,764	12,316	11,226
1966	16,740	13,133	7,542	1,853	9,543	10,209	12,264	11,057	11,996	NA	9,510	11,237	10,051	12,455	11,377
1967	16,972	13,284	8,289	1,917	9,756	10,546	12,574	11,485	11,931	NA	10,106	11,699	10,589	12,776	11,571
1968	17,604	13,780	9,172	2,085	10,140	10,946	12,998	11,886	12,536	NA	10,690	12,356	10,734	13,164	11,987
1969	17,977	14,308	10,149	2,321	10,739	11,640	13,747	12,615	13,345	NA	11,269	13,046	11,125	13,726	12,179
1970	17,802	14,479	11,063	2,469	11,464	12,374	13,923	13,219	13,882	NA	11,779	13,628	11,270	14,482	12,419
1971	18,127	14,792	11,399	2,627	11,997	12,799	14,196	13,722	14,159	NA	11,922	14,059	11,708	14,518	12,599
1972	18,885	15,403	12,104	2,702	12,668	13,425	14,858	14,205	14,668	NA	12,185	14,348	12,220	14,807	13,001
1973	19,768	16,309	12,867	2,995	13,213	14,174	15,306	14,858	15,291	NA	12,890	14,951	12,633	15,367	13,926
1974	19,532	16,750	12,538	3,181	13,711	14,710	15,094	15,220	15,302	NA	13,368	15,436	13,207	15,812	13,686
4075	40.000	40.074	40.705	0.000	40.000	44.450	44.050	45.400	45.405	NIA	40.000	45 007	40.000	40.450	40.500
1975	19,289	16,874	12,765	3,336	13,698	14,452	14,950	15,109	15,165	NA	12,992	15,327	13,682	16,153	13,590
1976	20,105	17,568	13,130	3,669	14,350	15,232	15,877	15,688	16,050	NA	13,759	15,926	14,545	16,265	13,970
1977 1978	20,805 21,761	17,963	13,575	3,985	15,015	15,287	16,087 16,273	16,120	16,542	NA NA	14,107 14,585	16,200	15,003	15,948	14,307
1978	21,761	18,511 19,099	14,162 14,812	4,293 4,530	14,973 15,817	15,693 16,016	16,273	16,588 17,064	17,058 17,769	NA NA	15,369	16,483 16,736	15,624 16,244	16,180 16,765	14,804 15,202
1979	22,204	19,099	14,012	4,000	13,017	10,010	10,007	17,004	17,709	INA	15,509	10,730	10,244	10,703	13,202
1980	22,007	19,116	15,110	4,341	16,183	16,690	16,713	17,251	17,883	NA	15,896	16,801	16,994	17,010	14,849
1981	22,333	19,457	15,479	4,539	16,125	16,470	16,568	17,364	17,867	NA	15,938	16,600	17,099	16,988	14,652
1982	21,706	18,662	15,842	4,808	16,418	16,699	17,078	17,719	17,712	NA	15,948	16,332	17,065	17,148	14,914
1983	22,411	18,987	16,098	5,283	16,898	16,702	17,525	17,892	18,086	NA	16,075	16,547	17,612	17,441	15,446
1984	23,833	19,876	16,620	5,671	16,946	17,116	18,302	18,103	18,671	NA	16,454	17,026	18,593	18,130	15,769
	•	•		•		•	•	•	•		•	•	·	·	•
1985	24,538	20,758	17,244	5,983	17,308	17,280	19,079	18,280	19,097	NA	16,871	17,471	19,505	18,450	16,310
1986	25,154	21,095	17,649	6,608	17,691	17,530	19,747	18,631	19,531	NA	17,326	17,855	20,131	18,829	16,958
1987	25,806	21,671	18,295	7,297	17,964	17,931	19,782	19,008	19,816	NA	17,835	17,988	20,444	19,356	17,725
1988	26,649	22,429	19,347	8,040	18,491	18,679	20,001	19,781	20,430	NA	18,492	18,338	20,311	19,701	18,564
1989	27,312	22,587	20,201	8,469	19,163	19,318	20,042	20,495	20,961	NA	18,998	19,085	20,414	20,035	18,903
1990	27,504	22,308	21,158	9,184	19,853	19,789	20,253	20,914	21,739	NA	19,339	19,735	20,745	20,152	18,956
1991	27,149	21,662	22,069	10,161	20,099	20,151	20,773	21,239	22,657	19,562	19,758	19,709	21,612	19,363	18,199
1992	27,750	21,622	22,410	10,852	20,829	21,454	21,071	21,702	23,501	20,700	20,403	20,352	22,530	19,038	19,043
1993	28,106	21,897	22,609	11,606	20,901	21,557	21,560	20,840	22,546	20,272	19,736	20,308	23,368	18,433	18,796
1994	28,951	23,019	22,869	12,677	21,453	22,079	22,786	20,935	23,248	21,128	20,410	20,987	23,470	18,845	19,174
1995	20.456	23,768	22 224	12.020	24.070	22,775	22 020	24 524	23,908	24 964	24 244	22 122	24 242	20,042	10.416
	29,456 30,261	23,768 24,293	23,334	13,938	21,970 22,660	22,775 22,927	23,920	21,524	23,908 23,734	21,864	21,244	22,123	24,313		19,416
1996	30,261	24,293 24,973	24,651	15,026			24,910	21,326		21,881	21,711	22,552	26,198 27,171	20,291	20,497
1997			24,942	15,625	23,194	23,605	25,584	21,660	24,195	22,236	21,986	23,283		20,636	21,149
1998	32,413	25,496	24,170	14,574	23,930	24,239	26,176	22,255	24,868	22,856	22,234	24,008	27,581	21,218	21,502

Table 2. Real GDP per CAPITA Converted to U.S. Dollars using EKS PPPs (United States = 100)

Year	United								Former	Unified		Nether-			United
	States	Canada	Japan	Korea	Austria	Belgium	Denmark	France	W.Germany	Germany	Italy	lands	Norway	Sweden	Kingdom
1960	100.0	78.3	34.8	10.6	57.2	60.2	73.0	63.7	73.4	NA	54.3	69.7	60.5	73.8	74.4
1961	100.0	78.6	38.4	10.8	59.5	62.5	76.3	66.1	75.3	NA	58.2	70.3	63.3	77.0	75.1
1962	100.0	79.0	39.5	10.3	58.0	62.7	76.5	66.3	74.6	NA	58.7	69.3	61.7	76.5	72.3
1963	100.0	79.2	41.4	10.6	58.3	63.2	74.1	66.7	73.8	NA	59.8	68.6	61.9	77.9	72.6
1964	100.0	79.4	43.6	10.9	58.8	64.2	76.8	67.4	74.7	NA	58.3	70.5	61.8	79.2	72.9
1965	100.0	79.0	43.4	10.7	57.2	62.7	76.0	66.7	74.1	NA	56.9	69.7	61.4	77.5	70.6
1966	100.0	78.5	45.1	11.1	57.0	61.0	73.3	66.0	71.7	NA	56.8	67.1	60.0	74.4	68.0
1967	100.0	78.3	48.8	11.3	57.5	62.1	74.1	67.7	70.3	NA	59.5	68.9	62.4	75.3	68.2
1968	100.0	78.3	52.1	11.8	57.6	62.2	73.8	67.5	71.2	NA	60.7	70.2	61.0	74.8	68.1
1969	100.0	79.6	56.5	12.9	59.7	64.7	76.5	70.2	74.2	NA	62.7	72.6	61.9	76.4	67.7
1970	100.0	81.3	62.1	13.9	64.4	69.5	78.2	74.3	78.0	NA	66.2	76.6	63.3	81.4	69.8
1971	100.0	81.6	62.9	14.5	66.2	70.6	78.3	75.7	78.1	NA	65.8	77.6	64.6	80.1	69.5
1972	100.0	81.6	64.1	14.3	67.1	71.1	78.7	75.2	77.7	NA	64.5	76.0	64.7	78.4	68.8
1973	100.0	82.5	65.1	15.1	66.8	71.7	77.4	75.2	77.4	NA	65.2	75.6	63.9	77.7	70.4
1974	100.0	85.8	64.2	16.3	70.2	75.3	77.3	77.9	78.3	NA	68.4	79.0	67.6	81.0	70.1
1975	100.0	87.5	66.2	17.3	71.0	74.9	77.5	78.3	78.6	NA	67.4	79.5	70.9	83.7	70.5
1976	100.0	87.4	65.3	18.2	71.4	75.8	79.0	78.0	79.8	NA	68.4	79.2	72.3	80.9	69.5
1977	100.0	86.3	65.2	19.2	72.2	73.5	77.3	77.5	79.5	NA	67.8	77.9	72.1	76.7	68.8
1978	100.0	85.1	65.1	19.7	68.8	72.1	74.8	76.2	78.4	NA	67.0	75.7	71.8	74.4	68.0
1979	100.0	85.8	66.6	20.4	71.1	72.0	75.5	76.7	79.8	NA	69.1	75.2	73.0	75.3	68.3
1980	100.0	86.9	68.7	19.7	73.5	75.8	75.9	78.4	81.3	NA	72.2	76.3	77.2	77.3	67.5
1981	100.0	87.1	69.3	20.3	72.2	73.7	74.2	77.8	80.0	NA	71.4	74.3	76.6	76.1	65.6
1982	100.0	86.0	73.0	22.2	75.6	76.9	78.7	81.6	81.6	NA	73.5	75.2	78.6	79.0	68.7
1983	100.0	84.7	71.8	23.6	75.4	74.5	78.2	79.8	80.7	NA	71.7	73.8	78.6	77.8	68.9
1984	100.0	83.4	69.7	23.8	71.1	71.8	76.8	76.0	78.3	NA	69.0	71.4	78.0	76.1	66.2
1985	100.0	84.6	70.3	24.4	70.5	70.4	77.8	74.5	77.8	NA	68.8	71.2	79.5	75.2	66.5
1986	100.0	83.9	70.2	26.3	70.3	69.7	78.5	74.1	77.6	NA	68.9	71.0	80.0	74.9	67.4
1987	100.0	84.0	70.9	28.3	69.6	69.5	76.7	73.7	76.8	NA	69.1	69.7	79.2	75.0	68.7
1988	100.0	84.2	72.6	30.2	69.4	70.1	75.1	74.2	76.7	NA	69.4	68.8	76.2	73.9	69.7
1989	100.0	82.7	74.0	31.0	70.2	70.7	73.4	75.0	76.7	NA	69.6	69.9	74.7	73.4	69.2
1990	100.0	81.1	76.9	33.4	72.2	72.0	73.6	76.0	79.0	NA	70.3	71.8	75.4	73.3	68.9
1991	100.0	79.8	81.3	37.4	74.0	74.2	76.5	78.2	83.5	72.1	72.8	72.6	79.6	71.3	67.0
1992	100.0	77.9	80.8	39.1	75.1	77.3	75.9	78.2	84.7	74.6	73.5	73.3	81.2	68.6	68.6
1993	100.0	77.9	80.4	41.3	74.4	76.7	76.7	74.1	80.2	72.1	70.2	72.3	83.1	65.6	66.9
1994	100.0	79.5	79.0	43.8	74.1	76.3	78.7	72.3	80.3	73.0	70.5	72.5	81.1	65.1	66.2
1995	100.0	80.7	79.2	47.3	74.6	77.3	81.2	73.1	81.2	74.2	72.1	75.1	82.5	68.0	65.9
1996	100.0	80.3	81.5	49.7	74.9	75.8	82.3	70.5	78.4	72.3	71.7	74.5	86.6	67.1	67.7
1997	100.0	79.7	79.6	49.8	74.0	75.3	81.6	69.1	77.2	70.9	70.1	74.3	86.7	65.8	67.5
1998	100.0	78.7	74.6	45.0	73.8	74.8	80.8	68.7	76.7	70.5	68.6	74.1	85.1	65.5	66.3

Table 3. Real GDP per EMPLOYED PERSON Converted to U.S. Dollars using EKS PPPs (1998 U.S. Dollars)

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48 42 86 07 46 10 33 38 03 94 74 25

Table 4. Real GDP per EMPLOYED PERSON Converted to U.S. Dollars using EKS PPPs (United States = 100)

									Former	Unified		Nether-			United
	States	Canada	Japan	Korea	Austria	Belgium	Denmark	France	W.Germany	Germany	Italy	lands	Norway	Sweden	Kingdom
1960	100.0	NA	28.1	NA	47.2	60.0	61.3	55.3	59.0	NA	NA	65.7	54.0	57.7	61.0
1961	100.0	NA	30.4	NA	48.3	61.1	62.6	57.1	59.5	NA	NA	65.1	55.1	59.1	60.5
1962	100.0	NA	31.3	NA	47.7	60.7	62.4	58.4	59.5	NA	NA	63.9	54.1	58.8	58.6
1963	100.0	NA	32.8	14.1	48.6	61.2	60.2	59.4	59.4	NA	NA	63.3	54.3	59.9	59.1
1964	100.0	NA	34.7	14.6	49.9	62.3	62.1	60.4	61.1	NA	NA	65.2	54.9	60.9	59.4
1965	100.0	NA	34.8	14.2	49.8	61.9	61.5	60.8	61.7	NA	NA	65.6	55.2	60.5	58.0
1966	100.0	NA	36.3	15.0	51.2	61.5	59.8	61.4	61.4	NA	NA	64.7	55.1	59.6	57.0
1967	100.0	NA	39.5	15.3	53.6	64.1	62.2	64.0	63.2	NA	NA	68.2	58.1	62.2	58.9
1968	100.0	NA	42.2	15.8	55.3	65.2	62.3	65.2	64.9	NA	NA	70.3	57.8	62.2	60.1
1969	100.0	NA	46.5	17.4	58.5	67.9	65.2	68.3	68.3	NA	NA	73.4	59.5	63.7	60.9
1970	100.0	NA	50.9	18.3	62.8	72.4	66.3	71.5	71.1	NA	NA	77.0	60.0	66.8	62.7
1971	100.0	NA	51.4	18.7	63.5	72.6	65.9	72.6	71.0	NA	NA	77.8	60.5	65.7	63.2
1972	100.0	NA	54.4	18.3	65.5	74.9	66.5	73.7	72.1	NA	NA	79.1	61.5	65.5	63.5
1973	100.0	NA	56.0	19.1	66.2	76.8	66.5	74.9	73.0	NA	NA	81.2	62.2	66.3	65.4
1974	100.0	NA	56.7	20.3	69.4	80.5	67.5	78.2	75.7	NA	NA	85.5	66.0	68.6	65.5
1975	100.0	NA	58.1	21.0	69.1	79.8	67.3	78.0	76.1	NA	NA	85.6	66.9	68.4	64.8
1976	100.0	86.7	58.8	21.7	70.6	83.1	69.1	79.2	79.1	NA	NA	87.4	67.8	67.6	65.9
1977	100.0	87.1	60.0	23.1	72.5	83.0	69.0	80.3	80.5	NA	NA	86.8	67.9	65.7	66.8
1978	100.0	86.5	61.5	23.8	71.0	84.1	68.4	81.5	81.1	NA	NA	86.9	68.8	65.7	67.6
1979	100.0	85.9	63.7	25.1	74.2	84.6	69.6	83.3	82.7	NA	NA	86.7	70.3	66.9	68.2
1070	100.0	00.0	00.1	20.1	7 1.2	01.0	00.0	00.0	02.7	14/1	147 (00.1	7 0.0	00.0	00.2
1980	100.0	85.0	65.1	24.5	75.5	88.7	69.9	84.8	82.6	NA	NA	85.4	72.3	67.6	67.7
1981	100.0	84.0	65.7	25.0	74.5	88.1	69.2	85.0	81.6	NA	84.7	83.4	71.1	66.5	68.3
1982	100.0	85.1	67.8	26.5	77.9	91.5	71.8	88.0	82.7	NA	86.3	83.8	72.0	68.1	71.0
1983	100.0	84.5	66.3	28.5	78.7	89.9	71.3	87.1	83.0	NA	84.8	84.5	72.7	67.2	71.8
1984	100.0	84.4	66.5	30.2	76.6	89.5	71.0	86.1	82.7	NA	84.0	83.6	74.1	67.2	69.9
1985	100.0	84.8	67.7	30.5	76.7	88.3	71.0	86.5	82.2	NA	84.6	82.3	74.5	66.6	70.2
1986	100.0	83.6	68.3	32.4	77.3	88.0	70.8	87.2	82.0	NA	85.6	82.3	73.9	67.0	71.8
1987	100.0	83.9	69.8	34.0	77.9	88.8	69.8	87.9	81.9	NA	87.7	81.3	73.2	67.9	73.0
1988	100.0	83.6	71.5	35.9	78.6	89.8	69.6	89.4	82.6	NA	89.1	81.9	72.0	67.1	72.8
1989	100.0	82.8	72.4	36.2	79.7	90.3	69.3	90.3	83.2	NA	90.4	82.6	73.7	66.8	71.5
1990	100.0	82.1	74.2	38.3	81.3	91.0	70.3	91.2	85.0	NA	90.6	82.1	75.4	66.7	71.0
1991	100.0	81.6	75.7	41.1	81.3	92.2	72.2	92.4	86.9	74.9	91.6	80.7	78.9	65.0	69.6
1992	100.0	80.7	74.2	42.4	82.6	96.3	72.1	92.8	87.9	79.1	92.9	79.1	80.7	65.5	72.7
1993	100.0	80.8	74.1	44.6	83.3	97.2	74.4	89.8	85.7	78.6	90.0	78.0	83.2	66.6	71.9
1994	100.0	82.7	73.8	47.0	84.4	99.1	77.8	89.0	88.3	81.3	93.2	79.3	81.6	68.1	71.7
1995	100.0	83.9	74.5	50.2	85.7	100.1	80.0	90.0	90.7	83.6	96.5	81.8	82.1	70.8	70.8
1996	100.0	83.7	76.8	52.5	87.1	98.2	80.9	87.3	89.4	82.8	96.2	80.3	85.2	70.6	72.6
1997	100.0	83.5	75.3	53.1	87.2	98.6	79.8	86.8	90.3	83.8	95.4	78.9	84.4	70.9	72.3
1998	100.0	81.5	71.7	51.4	86.8	97.4	78.0	86.1	90.2	83.8	93.7	77.5	82.0	70.0	70.9

Table 5. Real GDP per Capita and per Employed Person

Average Annual Percent Change¹

Country	1980-98	1980-85	1985-90	1990-98	1994	1995	1996	1997	1998
			Real Gr	oss Domestic	Product per	r Capita			
United States	2.2	2.2	2.3	2.1	3.0	1.7	2.7	3.6	3.4
Canada	1.6	1.7	1.5	1.7	5.1	3.3	2.2	2.8	2.1
Japan	2.6	2.7	4.2	1.7	1.2	2.0	5.6	1.2	-3.1
Korea	7.0	6.6	8.9	5.9	9.2	9.9	7.8	4.0	-6.7
Austria	2.2	1.4	2.8	2.4	2.6	2.4	3.1	2.4	3.2
Belgium	2.1	0.7	2.7	2.6	2.4	3.2	0.7	3.0	2.7
Denmark	2.5	2.7	1.2	3.3	5.7	5.0	4.1	2.7	2.3
France	1.4	1.2	2.7	0.8	0.5	2.8	-0.9	1.6	2.7
Former W.Germany	1.8	1.3	2.6	1.7	3.1	2.8	-0.7	1.9	2.8
Unified Germany	NA	NA	NA	NA	4.2	3.5	0.1	1.6	2.8
Italy	1.9	1.2	2.8	1.8	3.4	4.1	2.2	1.3	1.1
Netherlands	2.0	0.8	2.5	2.5	3.3	5.4	1.9	3.2	3.1
Norway	2.7	2.8	1.2	3.6	0.4	3.6	7.8	3.7	1.5
Sweden	1.2	1.6	1.8	0.6	2.2	6.4	1.2	1.7	2.8
United Kingdom	2.1	1.9	3.1	1.6	2.0	1.3	5.6	3.2	1.7
		i	Real Gross D	omestic Prod	uct per Emp	loyed Persor	1		
United States	1.6	1.6	1.2	1.9	1.8	1.3	2.3	2.3	2.8
Canada	1.4	1.6	0.6	1.8	4.1	2.8	2.1	2.0	0.4
Japan	2.2	2.4	3.1	1.4	1.4	2.2	5.4	0.3	-2.2
Korea	5.9	6.2	5.9	5.7	7.1	8.2	6.9	3.6	-0.6
Austria	2.4	1.9	2.4	2.7	3.1	2.9	3.9	2.4	2.3
Belgium	2.1	1.5	1.8	2.7	3.7	2.3	0.3	2.6	1.7
Denmark	2.2	1.9	1.0	3.2	6.5	4.1	3.4	1.0	0.5
France	1.7	2.0	2.3	1.1	0.9	2.4	-0.8	1.7	2.0
Former W.Germany	2.1	1.5	1.9	2.6	4.9	4.0	0.8	3.3	2.7
Unified Germany	NA	NA	NA	NA	5.2	4.2	1.3	3.6	2.7
Italy	NA	NA	2.6	2.3	5.4	4.9	2.0	1.4	1.0
Netherlands	1.1	0.8	1.2	1.1	3.5	4.6	0.3	0.5	1.1
Norway	2.3	2.2	1.4	2.9	-0.3	2.0	6.1	1.3	-0.2
Sweden	1.8	1.3	1.2	2.5	4.0	5.3	1.9	2.8	1.5
United Kingdom	1.9	2.3	1.4	1.8	1.6	-0.0	4.8	1.8	0.9

¹Calculated from table 1 and table 3.

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Table 6. Purchasing Power Parities and Relative Prices

Country	1980	1985	1990	1993	1994	1995	1996	1997	1998
		Purch	asing Pow	or Paritios	for GDP ¹				
		i di cii		tates = 1.00)	ioi obi				
			(000	,					
United States	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Canada	1.206	1.256	1.300	1.260	1.229	1.212	1.190	1.180	1.159
Japan	243.9	213.6	195.0	184.0	179.1	172.9	166.0	163.4	162.1
Korea	411.6	465.0	538.0	591.0	611.4	629.0	629.0	638.2	664.3
Austria	14.91	14.50	14.00	13.90	13.90	13.80	13.60	13.59	13.57
Belgium	38.57	39.78	39.50	37.30	37.30	36.90	36.80	36.74	36.65
Denmark	7.999	8.951	9.390	8.790	8.710	8.450	8.330	8.339	8.414
France	5.559	6.559	6.610	6.570	6.620	6.490	6.570	6.556	6.540
Germany ²	2.397	2.173	2.090	2.100	2.070	2.020	2.030	2.010	2.005
Italy	782.8	1183.7	1421.0	1534.0	1533.0	1556.0	1583.0	1598.0	1624.1
Netherlands	2.683	2.432	2.160	2.130	2.120	2.040	2.040	2.046	2.059
Norway	8.088	9.347	9.730	8.930	9.120	9.180	9.110	9.206	9.058
Sweden	6.734	7.814	9.340	9.830	9.900	9.770	9.680	9.638	9.604
United Kingdom	.4928	.5327	.6020	.6370	.6460	.6560	.6440	.6494	.6576
Rela	tive Prices (F	Ratio of Pu	rchasing P	ower Pariti	ies to Mark	et Exchan	ge Rates)		
	· · · · · · · · · · · · · · · · · · ·			States = 100)		•	,		
United States	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Canada	103.1	92.0	111.4	97.7	89.9	88.3	87.3	85.2	78.1
Japan	107.6	89.6	134.5	165.6	175.3	184.0	152.6	135.0	123.7
Korea	67.8	54.0	75.7	73.3	75.8	81.4	78.1	67.1	47.4
Austria	115.2	70.1	123.6	119.4	121.8	137.0	128.4	111.3	109.6
Belgium	131.9	67.0	118.2	107.9	111.6	125.2	118.8	102.6	100.9
Denmark	142.0	84.5	151.7	135.5	137.0	150.9	143.6	126.2	125.5
France	131.6	73.0	121.4	115.9	119.4	130.2	128.4	112.3	110.9
Germany ²	131.9	73.9	129.3	126.9	127.7	141.1	134.9	115.8	113.9
Italy	91.4	62.0	118.6	97.5	95.1	95.5	102.6	93.8	93.5
Netherlands	135.0	73.3	118.6	114.6	116.5	127.2	121.0	104.8	103.8
Norway	163.8	108.8	155.6	125.8	129.3	144.9	141.0	129.9	119.9
,									
Sweden	159.2	90.8	157.7	126.1	128.3	136.8	144.3	126.1	120.8

¹ For the European countries, the PPPs for 1990-1996 are OECD triannual and EUROSTAT annual benchmarks. For Japan and Canada, the PPPs for 1990, 1993 and 1996 are triennial benchmarks. For Korea, the PPPs for 1990, 1993 and 1996 are OECD estimates. All other PPPs are BLS estimates.

² Data for years prior to 1992 refer to former West Germany. Data for 1992 forward refer to Unified Germany.

NOTES

NA = Not available

- Data are subject to revision as countries revise the underlying statistics.
- Data for years prior to 1980 are shaded to reflect the limited accuracy of these data. The accuracy of estimated Purchasing Power Parities (PPPs) likely decreases the further removed a listed year is from the benchmark year. Benchmark year figures were extrapolated to the other years using relative changes in implicit GDP deflators, derived from individual country data. The time series on gross domestic product are constructed using each country's own price weights. Further, for most countries, it has been necessary to link GDP series, each of which was derived using deflators with its own base-year price weights, to construct one series for use over a long time period. Thus the methods underlying the relative GDP deflators used to extrapolate figures from the benchmark year vary by country and over time.
- Before 1973, the employment figures for the Netherlands are work-years of employed persons. Beginning with 1973, these are BLS estimates of persons employed, linked to the previous series.
- Beginning with 1962, the employment figures for Norway are persons employed from the Norwegian national accounts. For previous years, the employment series is based on full-time man-year equivalents.
- There are breaks in the following series:

United States: employment in 1990 (revised population controls introduced based on the 1990 Census); in 1994 (major redesign of the labor force survey); in 1997 and 1998 (revised population controls and new estimation procedures introduced into the household survey).

Italy: population in 1993 (figures incorporate adjustments to the lower population levels of the 1991 Census).

The Netherlands: employment in 1983 (replacement of man-year employment data with data from the Netherlands Survey of Employed Persons); in 1988 (in 1992 series revised back to 1988, based on a new survey questionnaire).

The trend series do not include any adjustment for these breaks. Therefore, the computed trends may differ from those that would result had the series been linked to remove the effects of the breaks.

In addition, due to breaks in series, data on GDP per employed person in Canada are not shown prior to 1976, and data on GDP per employed person in Italy are not shown prior to 1981.

• The PPP series for Germany pertains to the former West Germany before 1992, and to Unified Germany beginning with 1992. This same PPP series was used in the estimates for both former West Germany and Unified Germany.

APPENDIX: Purchasing Power Parities (PPPs)

The international PPP program

Beginning in the early 1970s, periodic studies have been undertaken by the United Nations International Comparison Project (UNICP) to develop PPPs and comparative output levels across countries. These studies have been conducted jointly since 1980 by the OECD and EUROSTAT for their member countries as part of the UNICP. There have been OECD-wide benchmark studies for the years 1980, 1985, 1990, 1993, and 1996.

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PPPs are price ratios, which relate the price of a basket of goods and services in a country's national currency to the price of an equivalent basket in a base country's currency. At the level of an individual item, a PPP is simply the ratio of the prices of the same commodity in two different countries. These ratios are combined into more aggregated expenditure categories, eventually up to that of overall GDP.

Two methods have been used in the UNICP to combine different commodity groups into a single PPP for total GDP in each country, the Elteto-Köves-Szulc (EKS) and the Geary-Khamis (GK) aggregation methods. Use of one or the other of these aggregation methods can result in differences in the estimated comparative levels of GDP per capita and per employed person.

In the EKS method, the averages do not account for differences in country size. Each country is assigned an equal weight. This weighting method is considered to be more neutral with regard to the different national price structures, and the relative position of countries is only marginally influenced by the composition of the group of countries being compared.

In the GK aggregation method, each country is weighted according to its share of the total group GDP. The weighting method tends to be influenced by the price structures of the countries being compared. Therefore, any changes in the composition of the group of countries being compared can significantly change the average common prices that are computed, and therefore the computed relationships between different countries. For a fuller discussion of the differences between the properties of these two aggregation methods see the 1999 edition of the 1996 PPP Results.¹

Beginning with the 1990 benchmark study, the OECD and EUROSTAT have published PPPs for each benchmark based on both the Elteto-Köves-Szulc (EKS) and the Geary-Khamis (GK) aggregation methods; previous benchmarks were aggregated using the GK method only. The EKS results are now recognized as the official results for the OECD and EUROSTAT and are used for administrative purposes within the European Union (EU). For this reason, they are prepared and released first for each benchmark study.

¹ OECD, Purchasing Power Parities and Real Expenditures, 1996 Results, 1999 Edition. Paris 1999.

In past releases of this data set, level comparisons were presented based on both sets of benchmark PPPs, EKS and GK. In the present release, only the Elteto-Köves-Szulc (EKS) PPPs are used. Table A shows the 1993 benchmark PPPs aggregated according to these two alternate methods.

Table A
Purchasing power parities for final expenditure on GDP
based on alternative PPP aggregation methods
in national currencies per U.S. dollar
1993

(U.S. = 1.00)

	EKS ²	GK^3
United States	1.00	1.00
Canada	1.26	1.23
Japan	184	170
Austria	13.9	13.8
Belgium	37.3	36.3
Denmark	8.79	8.32
France	6.57	6.32
Germany	2.10	2.06
Italy	1534	1501
Netherlands	2.13	2.02
Norway	8.93	8.18
Sweden	9.83	9.62
United Kingdom	0.637	0.634

In addition to the OECD-wide triennial benchmark studies, EUROSTAT estimates updated PPPs on an annual basis for the European countries only, using a "rolling benchmark" approach. Every year, approximately one third of the computed PPPs are replaced by new estimates, based on prices of goods and services collected during the year. The remaining PPPs are extrapolated, using a specific price index for each product group. These annual EUROSTAT benchmarks for the European countries are available for 1991, 1992, 1994 and 1995 (for Norway, only for 1994 and 1995).

² OECD, Statistics Directorate, Purchasing Power Parities and Real Expenditures, Volume I: EKS Results, 1993. Paris 1995.

³ OECD, Statistics Directorate, *Purchasing Power Parities and Real Expenditures*, *Volume II: GK Results*, 1993. Paris 1996.

⁴ OECD, Statistics Directorate, *Purchasing Power Parities and Real Expenditures, Volume I: EKS Results, 1993.* Paris 1995; and OECD, *Purchasing Power Parities and Real Expenditures, 1996 Results, 1999 Edition.* Paris 1999.

For all countries except Korea, the benchmark PPPs used by BLS are OECD triennial and EUROSTAT annual EKS benchmark PPPs. For Korea, BLS uses special OECD estimates of the Korean PPPs for 1990, 1993 and 1996. Because it did not become a member of the OECD until December 1996, Korea was not included in the OECD/EUROSTAT benchmark studies.

BLS method of estimating PPPs for non-benchmark years

To obtain a continuous time series of PPPs for each country, BLS uses estimates made by extrapolating from benchmark years or interpolating between benchmark years. These extrapolations and interpolations are based on a binary comparison between the relative movements of each country's GDP deflator and the GDP deflator of the United States over that period of time. The ratios expressing these relative movements are multiplied by the value of the country's PPP in the benchmark year to obtain the estimated PPPs.

Data in the accompanying tables are derived from the PPPs for selected years. The earliest PPP benchmark based on the EKS aggregation method was published for 1990, and the most recent EKS benchmark is for 1996. The 1990, 1993 and 1996 PPPs for all countries, except Korea, are triennial EKS benchmark estimates by the OECD and EUROSTAT. For Korea, the PPPs are OECD estimates.

For years prior to 1990, the PPPs for all countries used in this report are BLS estimates extrapolated backwards from 1990 PPPs.

For 1991, 1992, 1994 and 1995, the PPPs for the European countries are the annual benchmarks calculated by EUROSTAT (for Norway, for 1994 and 1995). For the non-European countries, the PPPs are BLS estimates, based on interpolations between the 1990, 1993 and 1996 benchmarks, as well as on the relative trends in GDP deflators between these countries and the United States.

For 1997 and 1998, the PPPs for all countries are BLS estimates, extrapolated from 1996 PPPs.

The results of this extrapolation procedure depend on the relative price changes and relative shifts in GDP expenditure patterns within the United States and within each country being compared. This may detract from the accuracy of the data for all non-benchmark years, since methods of measuring GDP and the price changes used to deflate current-value GDP differ among the countries covered by this data set (see the section on Data Sources).

Extrapolation results are also sensitive to the benchmark year that is used as a base. For a given benchmark year, purchasing power parities reflect the mutual price relationships among the entire group of countries being compared. The group of goods and services being priced in any benchmark year must be a representative sample of the GDP within a country, and also contain enough items in common with other countries for comparative pricing. The weights used for aggregating the different price ratios are derived from the expenditure structures of all of the countries in the benchmark year. For different

benchmark years, a different list of items may be priced, and a different weighting structure may be used. Finally, methods for collecting and comparing prices may differ among benchmarks.

In order to illustrate the impact of some of these issues, Table B compares the PPPs based on the 1996 benchmark study with estimated PPPs for 1996, calculated by extrapolating the 1993 benchmark PPPs. Data for years in which PPPs have been extrapolated from a benchmark become less reliable the farther they get from the benchmark year.

Table B EKS PPPs (U.S. = 1.00)

	1996	1996
		Extrapolated from
	Benchmark	1993 Benchmark
United States	1.00	1.00
Canada	1.19	1.25
Japan	166	170
Austria	13.6	14.0
Belgium	36.8	37.0
Denmark	8.33	8.66
France	6.57	6.48
Germany	2.03	2.08
Italy	1583	1651
Netherlands	2.04	2.12
Norway	9.11	9.03
Sweden	9.68	9.93
United Kingdom	0.644	0.645

However, despite these possible sources of inaccuracy, because changes in PPPs do depend directly on the relative rates of inflation in different countries, the extrapolation and interpolation method used in this report should produce reasonably robust estimates for years that are not too remote from the benchmark years being used.

Comparisons with OECD/EUROSTAT published data

The OECD also publishes comparative levels of GDP per capita.⁵ These differ from the level comparisons in the attached tables.

First, the per capita GDP figures presented in the OECD reports may differ from BLS figures due to timing of the receipt of revised data from national accounts offices.

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⁵ OECD, National Accounts, Main Aggregates, 1960-1997, Volume I, 1999 Edition. Paris 1999.

Also, for the United States, the GDP numbers used in the OECD reports are based on data that have been specially adjusted by the Bureau of Economic Analysis (BEA) at the request of the OECD. These adjustments mostly pertain to the treatment of imputed banking services and result in a somewhat lower U.S. GDP level than is obtained with the U.S. GDP data based on the NIPA's. This adjusted U.S. GDP series is based on a fixed-weighted deflator (1992 prices).

The U.S. GDP series used for the comparisons in the present report correspond to U.S. national accounts data as reported by the BEA. The real GDP series for the United States is the chain-type annual-weighted measure of real GDP published with the U.S. national accounts.

Finally, the OECD/EUROSTAT comparative levels of GDP per capita for all years are generally published in current prices and current PPPs, i.e. in U.S. dollars of the specific listed year. In contrast, the levels of GDP per capita and per employed person for all years in the attached tables are in constant 1998 U.S. dollars.

The following computation method was applied to value all years in 1998 U.S. dollars. First, for each country, PPPs were used to convert the current price GDP expressed in national currency units into nominal U.S. dollars. Then these nominal GDP series were converted into constant 1998 U.S. dollars by dividing them by the U.S. GDP deflator, scaled so that its 1998 value was equal to 1.